FIG. 1

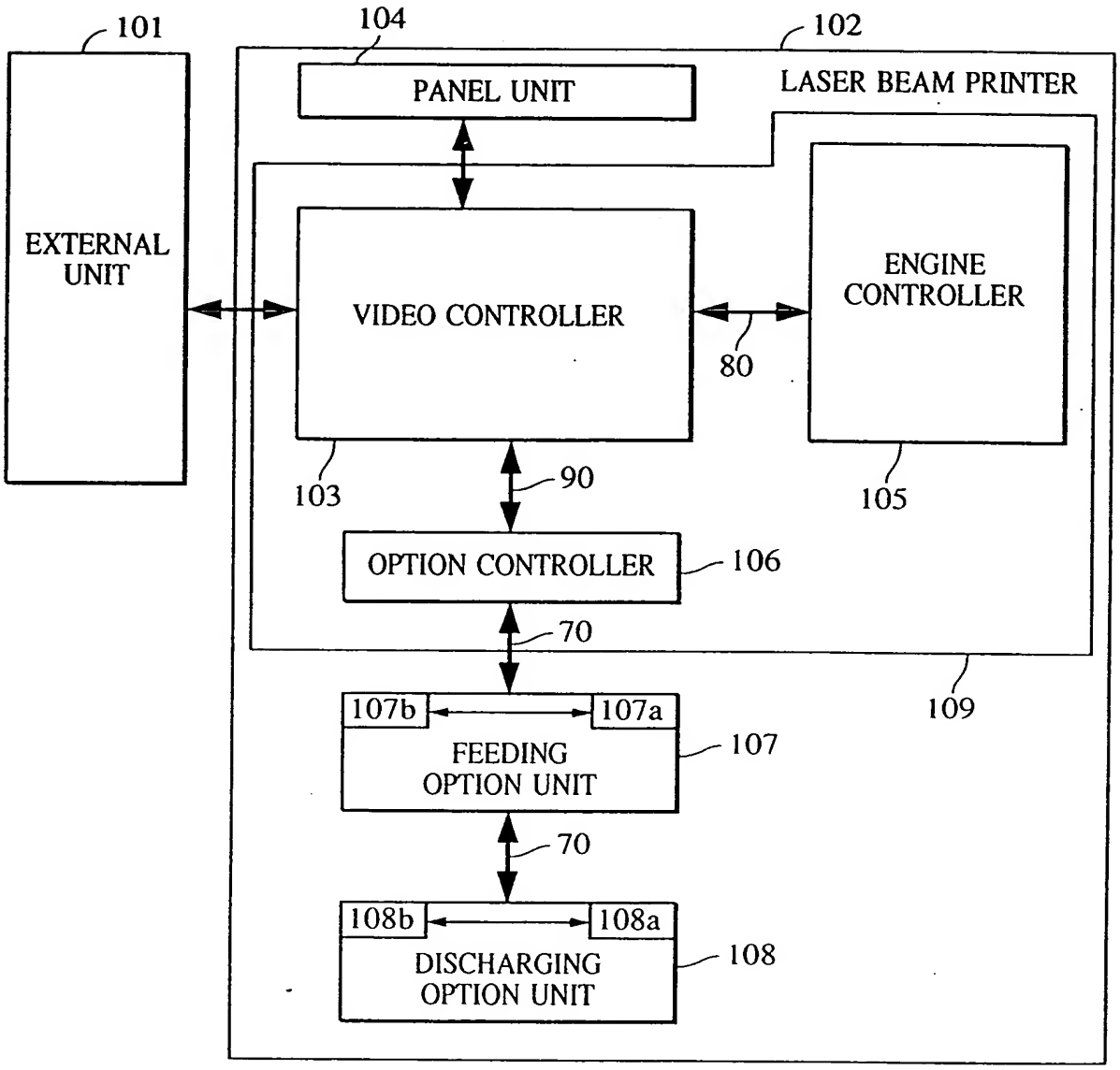

101
104
102
PANEL UNIT
LASER BEAM PRINTER
EXTERNAL UNIT
VIDEO CONTROLLER
ENGINE CONTROLLER
80
103
90
105
OPTION CONTROLLER
106
70
109
107b
107a
FEEDING OPTION UNIT
107
70
108b
108a
DISCHARGING OPTION UNIT
108

FIG. 2

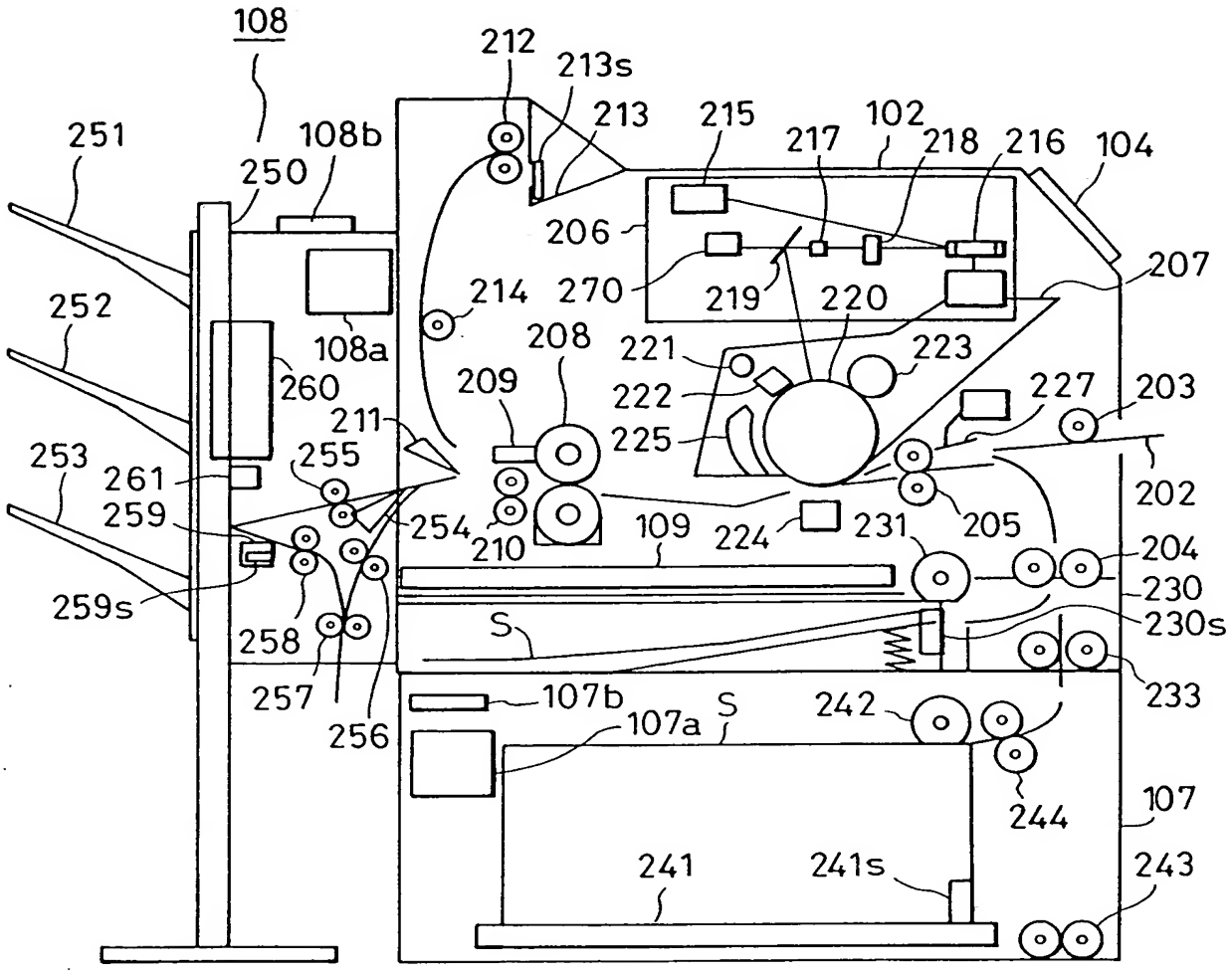

108
212
213s
213
215
102
217
218
216
104
251
108b
250
206
207
214
270
219
220
252
108a
208
221
223
260
209
222
227
203
211
225
253
261
255
202
259
254
210
109
224
231
205
204
230
259s
S
230s
258
233
257
107b
107a
S
242
256
244
107
241
241s
243

FIG. 3

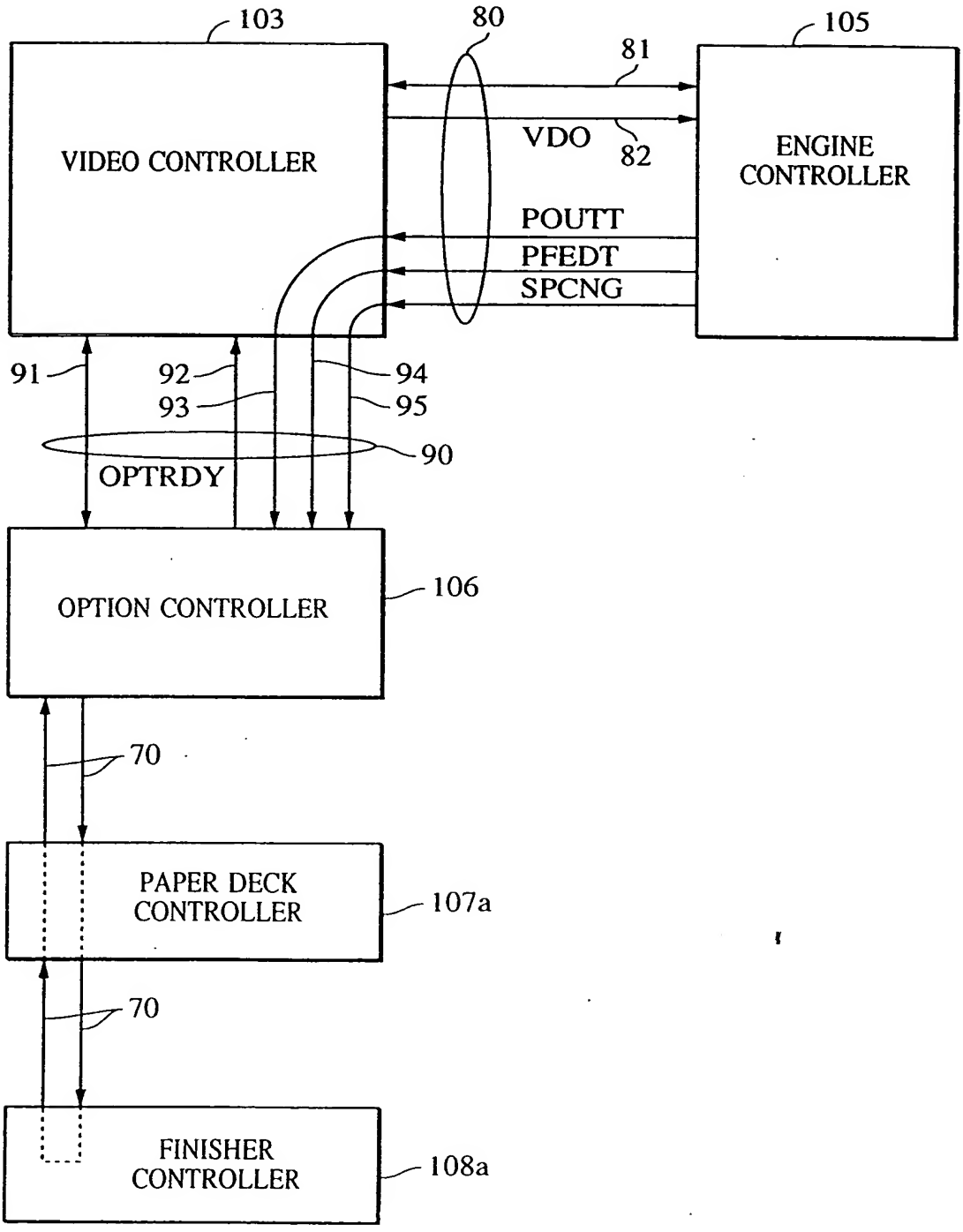
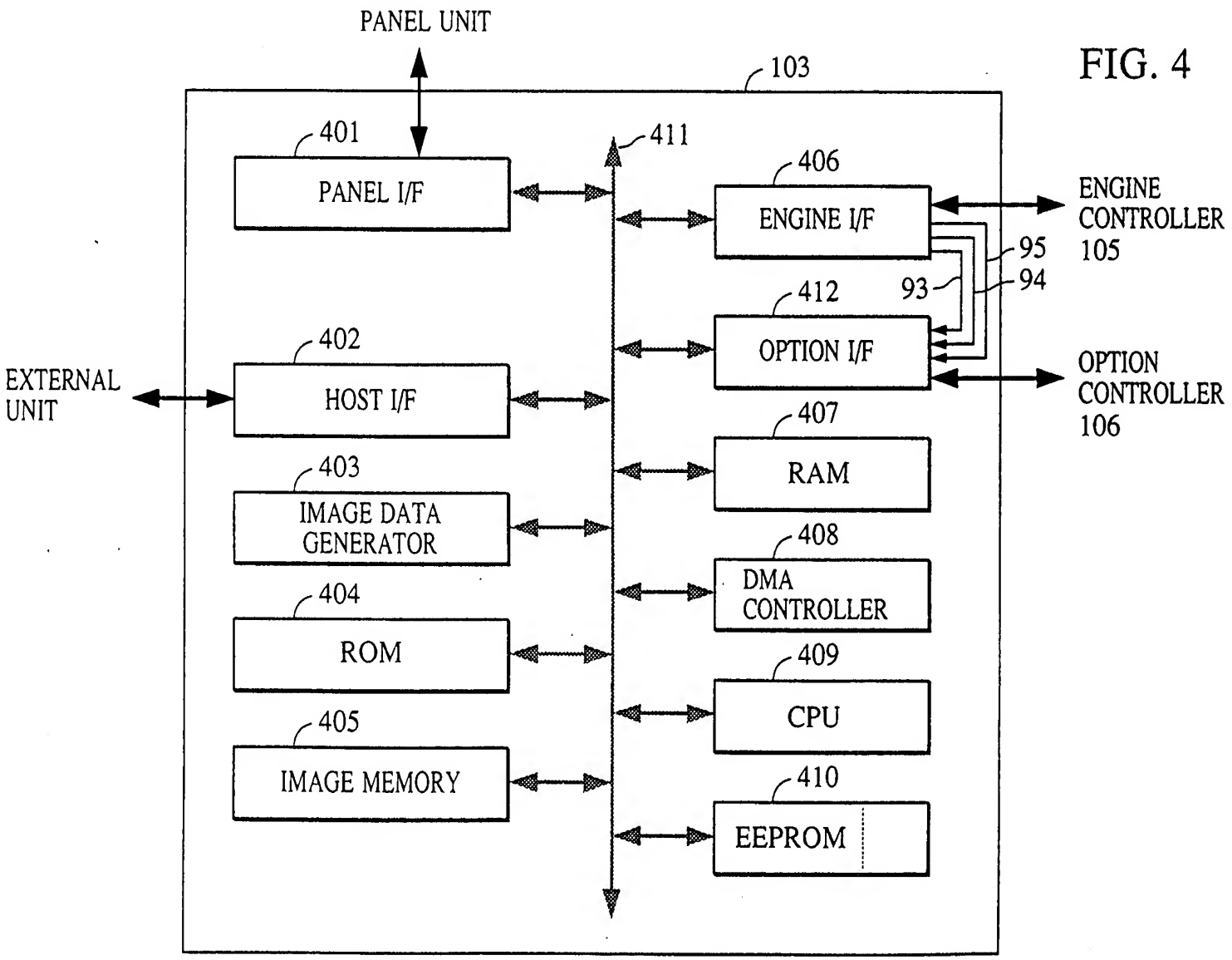

103
80
105
81
VIDEO CONTROLLER
VDO
82
ENGINE CONTROLLER
POUTT
PFEDT
SPCNG
91
92
93
94
95
90
OPTRDY
OPTION CONTROLLER
106
70
PAPER DECK CONTROLLER
107a
70
FINISHER CONTROLLER
108a

FIG. 4


PANEL UNIT
103
401
PANEL I/F
411
406
ENGINE I/F
ENGINE CONTROLLER 105
95
93
94
412
OPTION I/F
OPTION CONTROLLER 106
EXTERNAL UNIT
402
HOST I/F
407
RAM
403
IMAGE DATA GENERATOR
408
DMA CONTROLLER
404
ROM
409
CPU
405
IMAGE MEMORY
410
EEPROM

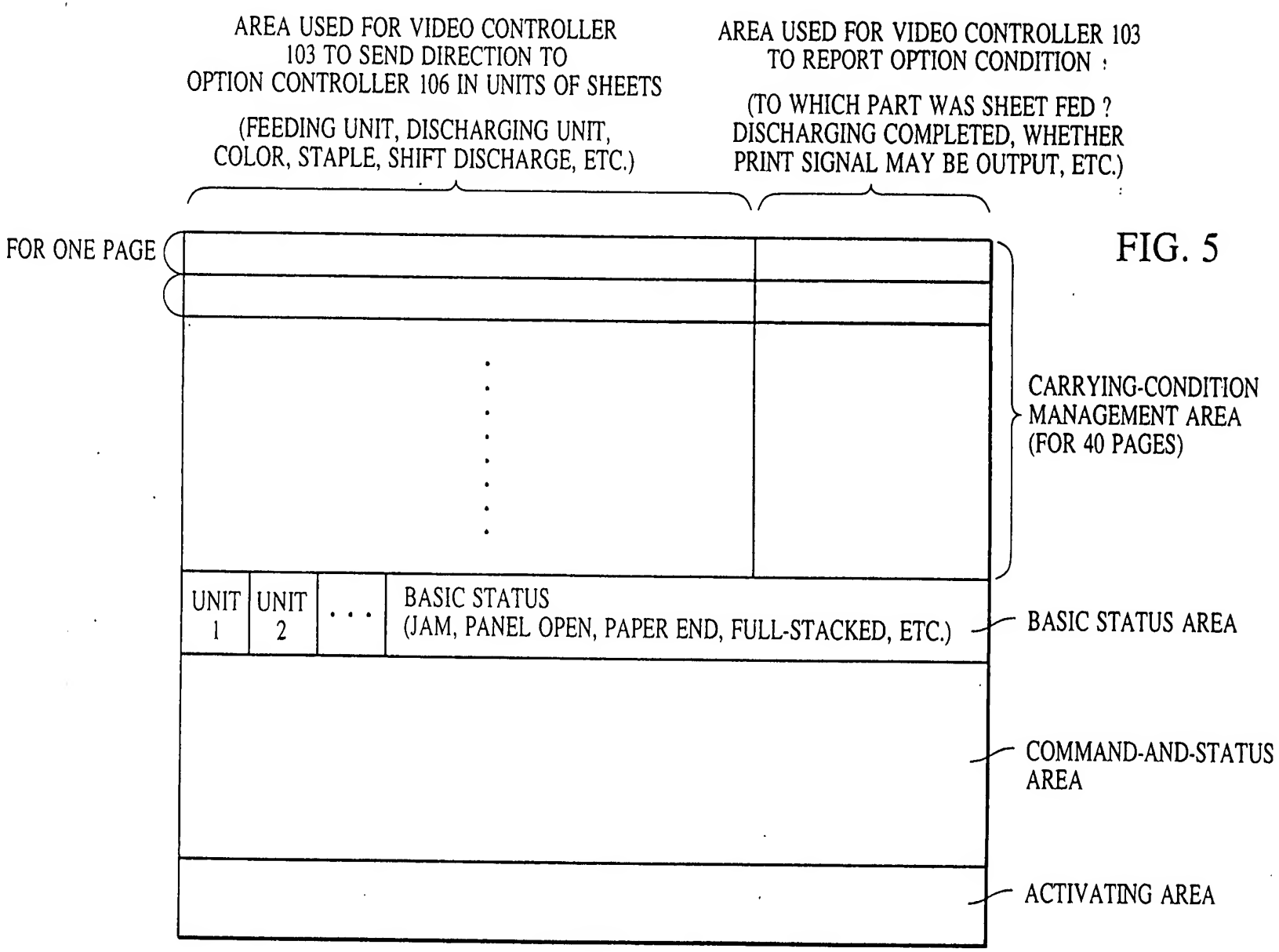

AREA USED FOR VIDEO CONTROLLER 103 TO SEND DIRECTION TO OPTION CONTROLLER 106 IN UNITS OF SHEETS
(FEEDING UNIT, DISCHARGING UNIT, COLOR, STAPLE, SHIFT DISCHARGE, ETC.)
AREA USED FOR VIDEO CONTROLLER 103 TO REPORT OPTION CONDITION :
(TO WHICH PART WAS SHEET FED ? DISCHARGING COMPLETED, WHETHER PRINT SIGNAL MAY BE OUTPUT, ETC.)
FOR ONE PAGE
CARRYING-CONDITION MANAGEMENT AREA (FOR 40 PAGES)
UNIT 1
UNIT 2
BASIC STATUS
(JAM, PANEL OPEN, PAPER END, FULL-STACKED, ETC.)
BASIC STATUS AREA
COMMAND-AND-STATUS AREA
ACTIVATING AREA

FIG. 5

FIG. 6

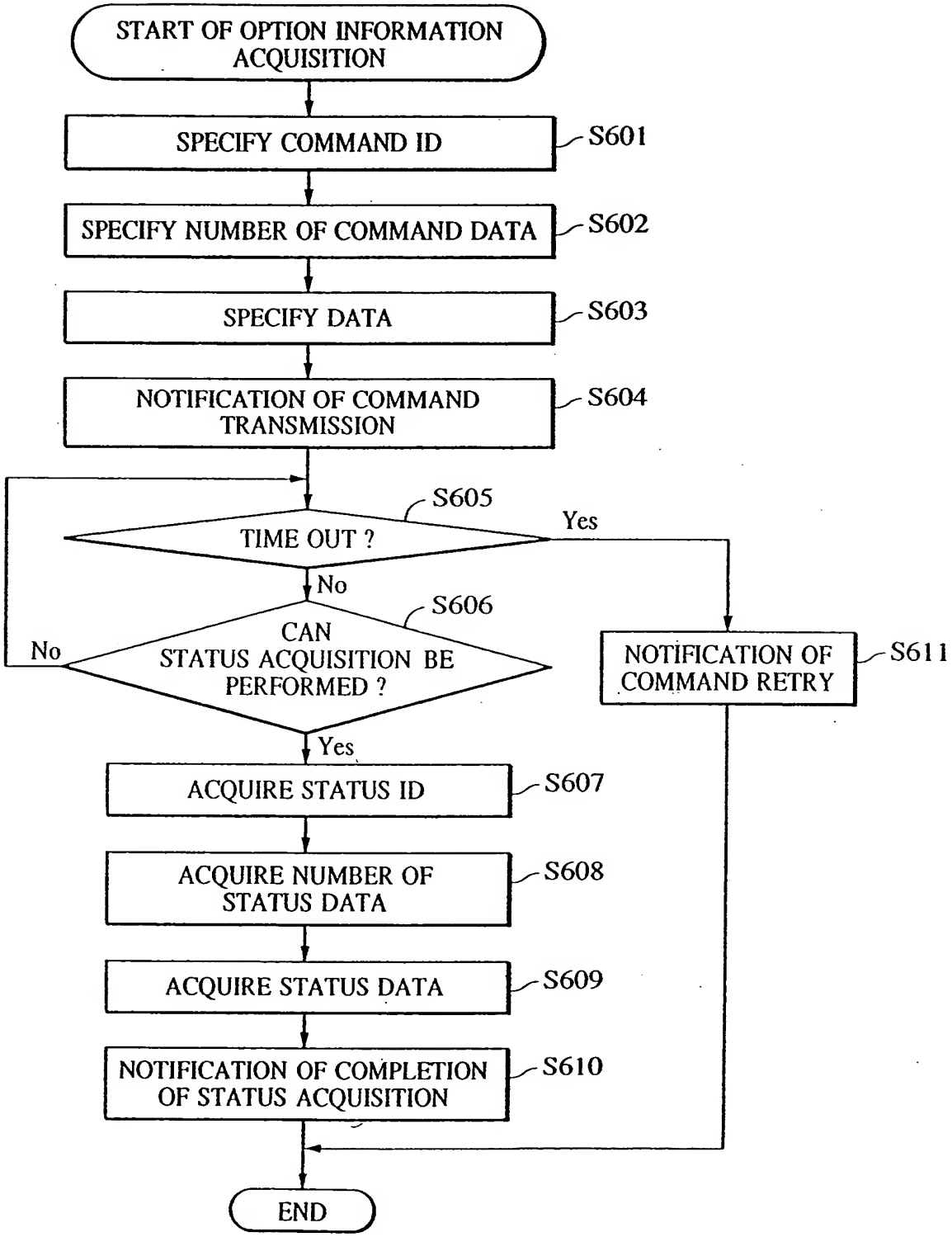

START OF OPTION INFORMATION ACQUISITION
SPECIFY COMMAND ID
S601
SPECIFY NUMBER OF COMMAND DATA
S602
SPECIFY DATA
S603
NOTIFICATION OF COMMAND TRANSMISSION
S604
S605
TIME OUT ?
Yes
No
S606
CAN STATUS ACQUISITION BE PERFORMED ?
No
Yes
NOTIFICATION OF COMMAND RETRY
S611
ACQUIRE STATUS ID
S607
ACQUIRE NUMBER OF STATUS DATA
S608
ACQUIRE STATUS DATA
S609
NOTIFICATION OF COMPLETION OF STATUS ACQUISITION
S610
END

FIG. 7

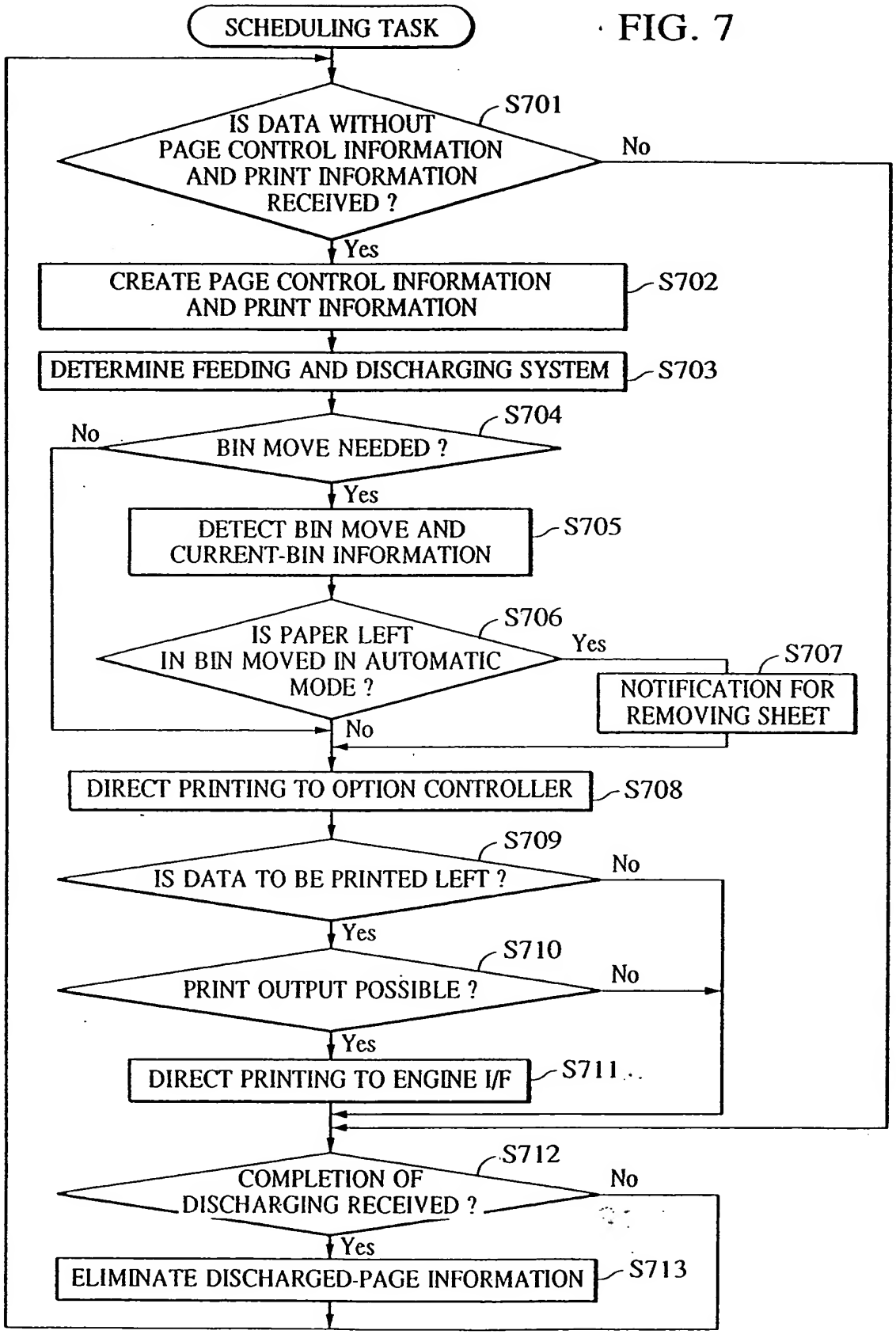

SCHEDULING TASK
S701
IS DATA WITHOUT PAGE CONTROL INFORMATION AND PRINT INFORMATION RECEIVED ?
No
Yes
CREATE PAGE CONTROL INFORMATION AND PRINT INFORMATION
S702
DETERMINE FEEDING AND DISCHARGING SYSTEM
S703
S704
No
BIN MOVE NEEDED ?
Yes
DETECT BIN MOVE AND CURRENT-BIN INFORMATION
S705
S706
IS PAPER LEFT IN BIN MOVED IN AUTOMATIC MODE ?
Yes
S707
NOTIFICATION FOR REMOVING SHEET
No
DIRECT PRINTING TO OPTION CONTROLLER
S708
S709
IS DATA TO BE PRINTED LEFT ?
No
Yes
S710
PRINT OUTPUT POSSIBLE ?
No
Yes
DIRECT PRINTING TO ENGINE I/F
S711
S712
COMPLETION OF DISCHARGING RECEIVED ?
No
Yes
ELIMINATE DISCHARGED-PAGE INFORMATION
S713

FIG. 8

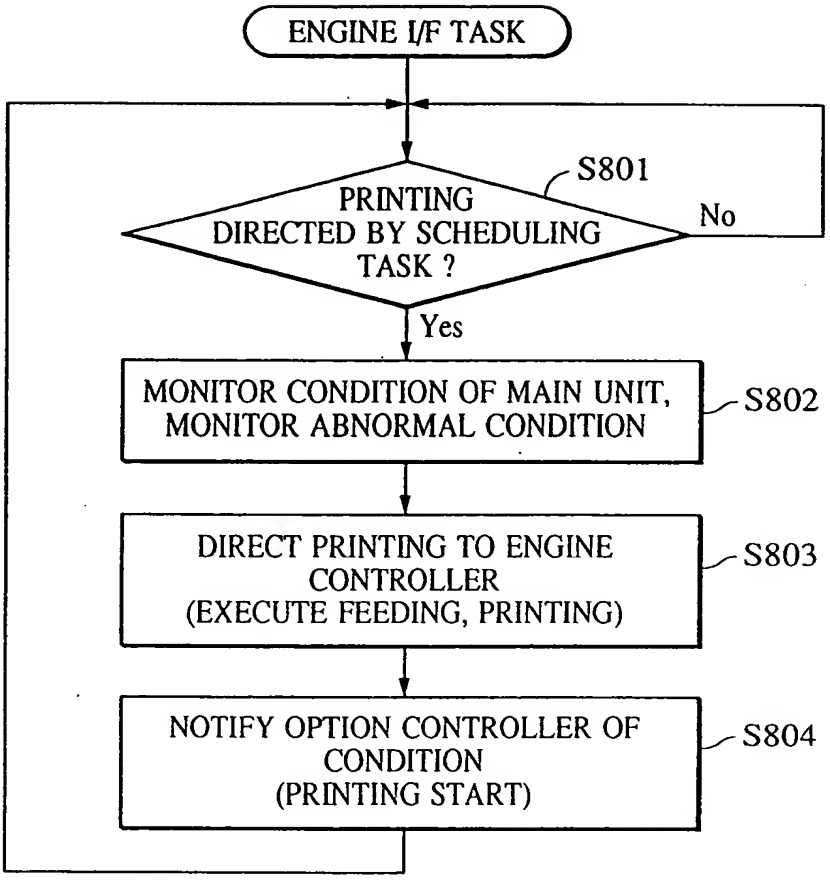

ENGINE I/F TASK
S801
PRINTING DIRECTED BY SCHEDULING TASK ?
No
Yes
MONITOR CONDITION OF MAIN UNIT, MONITOR ABNORMAL CONDITION
S802
DIRECT PRINTING TO ENGINE CONTROLLER (EXECUTE FEEDING, PRINTING)
S803
NOTIFY OPTION CONTROLLER OF CONDITION (PRINTING START)
S804

FIG. 9

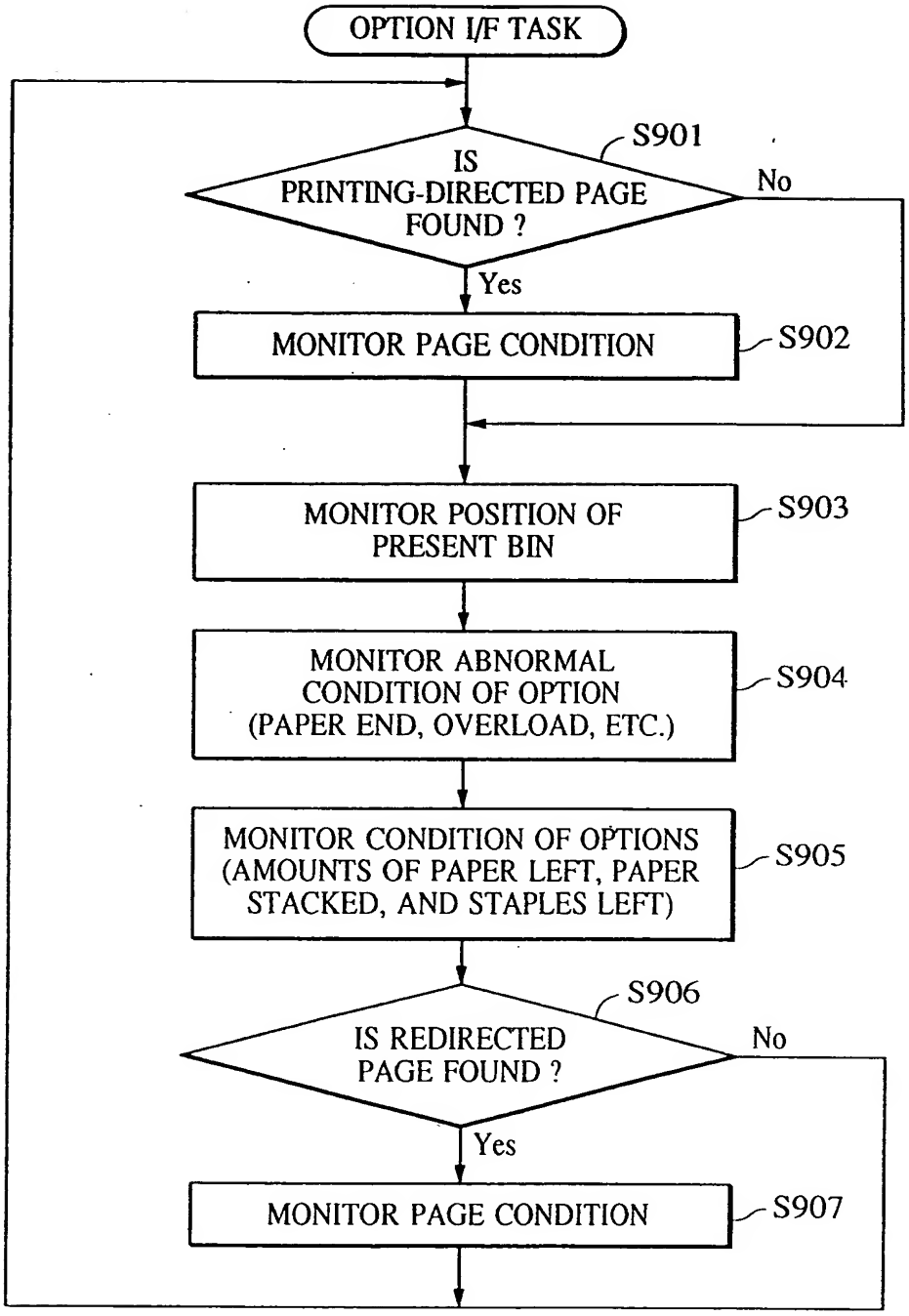

OPTION I/F TASK
S901
IS PRINTING-DIRECTED PAGE FOUND ?
No
Yes
MONITOR PAGE CONDITION
S902
MONITOR POSITION OF PRESENT BIN
S903
MONITOR ABNORMAL CONDITION OF OPTION (PAPER END, OVERLOAD, ETC.)
S904
MONITOR CONDITION OF OPTIONS (AMOUNTS OF PAPER LEFT, PAPER STACKED, AND STAPLES LEFT)
S905
S906
IS REDIRECTED PAGE FOUND ?
No
Yes
MONITOR PAGE CONDITION
S907

FIG. 10

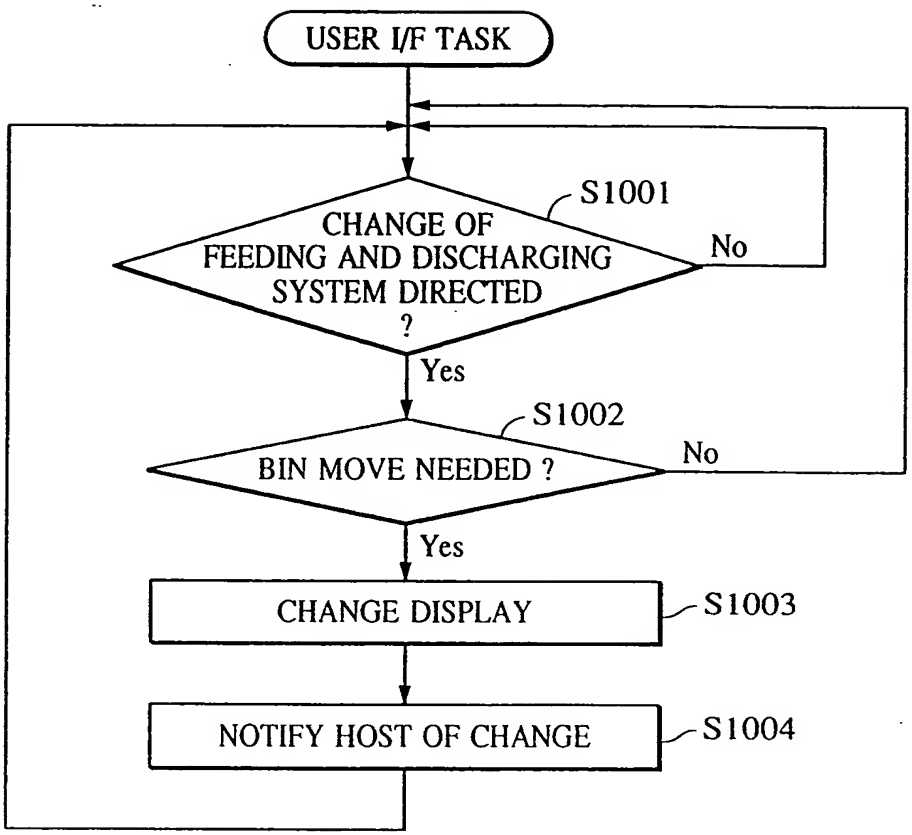

USER I/F TASK
S1001
CHANGE OF FEEDING AND DISCHARGING SYSTEM DIRECTED ?
No
Yes
S1002
BIN MOVE NEEDED ?
No
Yes
CHANGE DISPLAY
S1003
NOTIFY HOST OF CHANGE
S1004

FIG. 11A

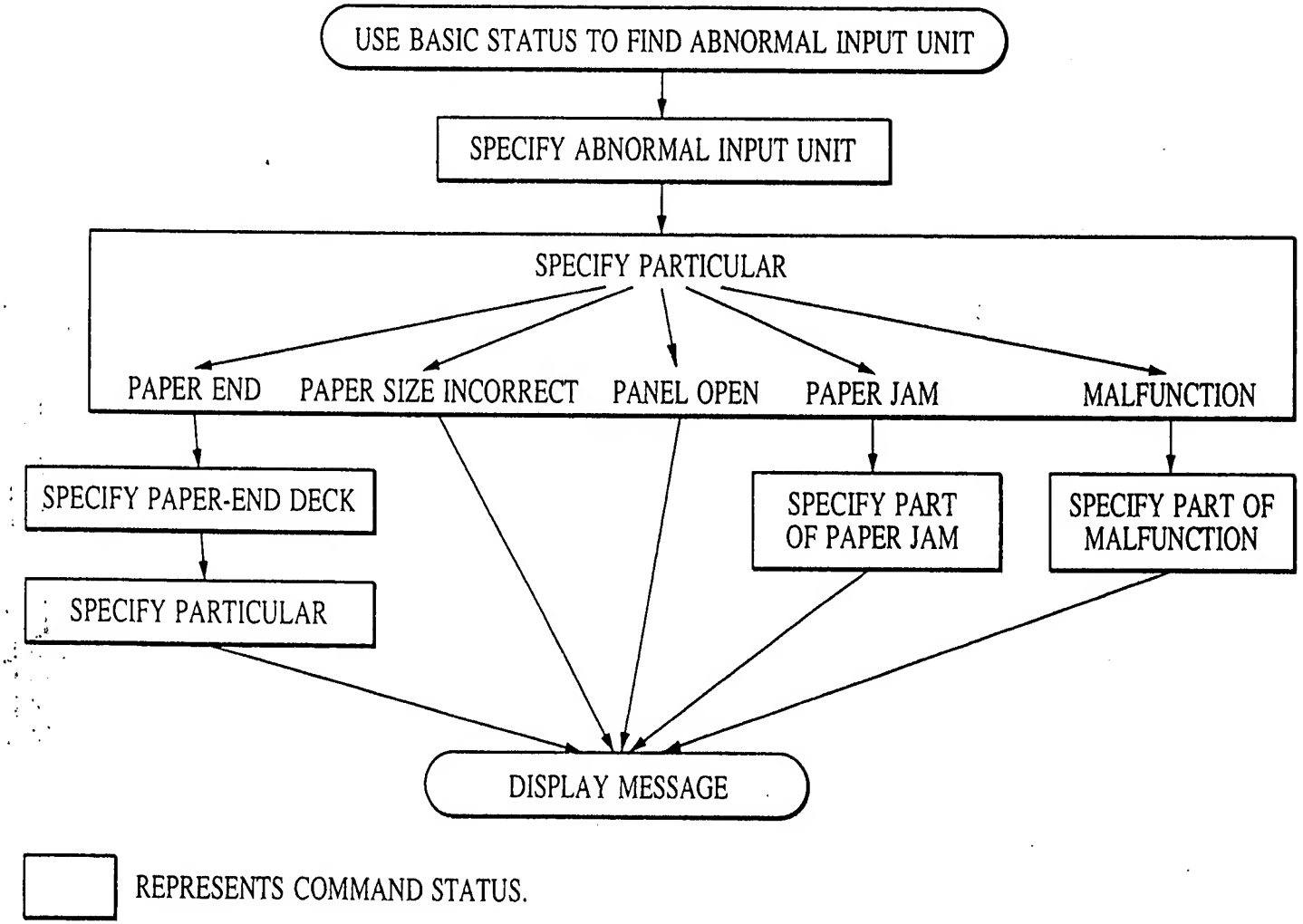

USE BASIC STATUS TO FIND ABNORMAL INPUT UNIT
SPECIFY ABNORMAL INPUT UNIT
SPECIFY PARTICULAR
PAPER END
PAPER SIZE INCORRECT
PANEL OPEN
PAPER JAM
MALFUNCTION
SPECIFY PAPER-END DECK
SPECIFY PARTICULAR
SPECIFY PART OF PAPER JAM
SPECIFY PART OF MALFUNCTION
DISPLAY MESSAGE
REPRESENTS COMMAND STATUS.

FIG. 11B

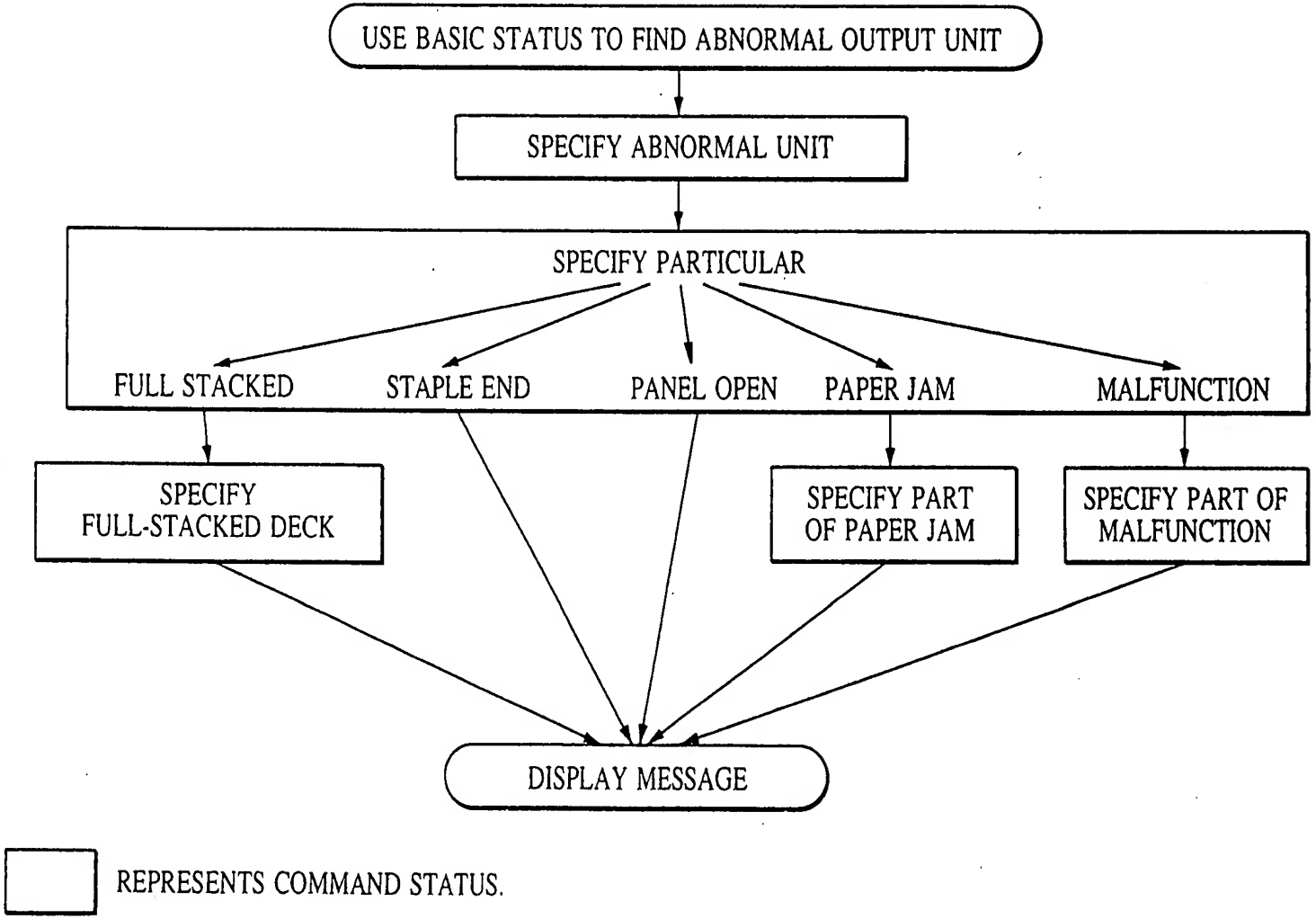
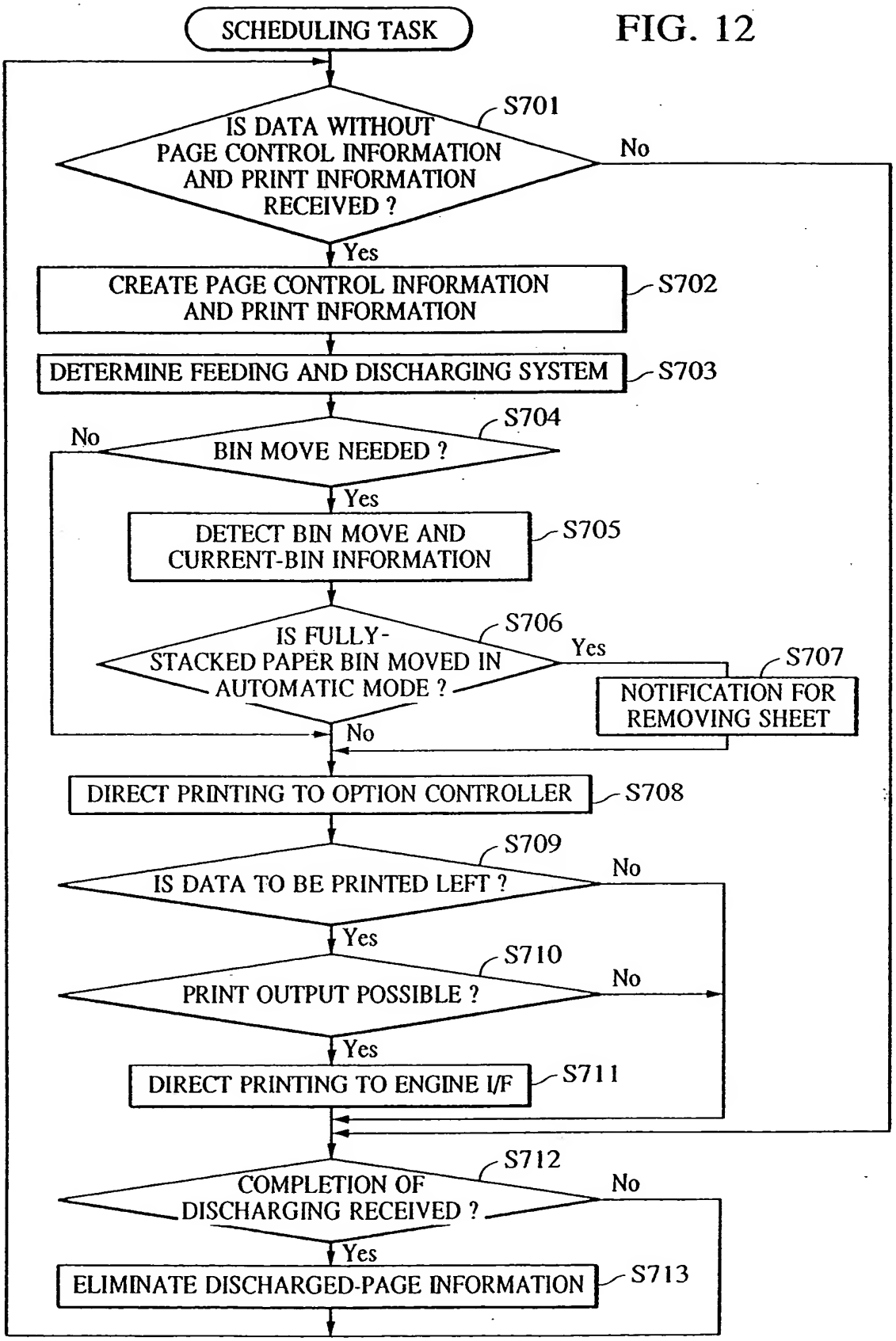

USE BASIC STATUS TO FIND ABNORMAL OUTPUT UNIT
SPECIFY ABNORMAL UNIT
SPECIFY PARTICULAR
FULL STACKED
STAPLE END
PANEL OPEN
PAPER JAM
MALFUNCTION
SPECIFY FULL-STACKED DECK
SPECIFY PART OF PAPER JAM
SPECIFY PART OF MALFUNCTION
DISPLAY MESSAGE
REPRESENTS COMMAND STATUS.

FIG. 12


SCHEDULING TASK
S701
IS DATA WITHOUT PAGE CONTROL INFORMATION AND PRINT INFORMATION RECEIVED ?
No
Yes
CREATE PAGE CONTROL INFORMATION AND PRINT INFORMATION
S702
DETERMINE FEEDING AND DISCHARGING SYSTEM
S703
S704
No
BIN MOVE NEEDED ?
Yes
DETECT BIN MOVE AND CURRENT-BIN INFORMATION
S705
S706
IS FULLY-STACKED PAPER BIN MOVED IN AUTOMATIC MODE ?
Yes
S707
NOTIFICATION FOR REMOVING SHEET
No
DIRECT PRINTING TO OPTION CONTROLLER
S708
S709
IS DATA TO BE PRINTED LEFT ?
No
Yes
S710
PRINT OUTPUT POSSIBLE ?
No
Yes
DIRECT PRINTING TO ENGINE I/F
S711
S712
COMPLETION OF DISCHARGING RECEIVED ?
No
Yes
ELIMINATE DISCHARGED-PAGE INFORMATION
S713